May 7, 1943

Copper Commando - vol. 1, no. 19

Victory Labor-Management Production Committees of Butte, Anaconda and Great Falls

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Copper Commando

"POP, how are you doing?"

JACOB TABARACCI

"Pop, how are you doing? I am sending you and mom a picture of me in my Ski Troopers uniform. My cap is crooked, snow all over my pants, and now who says I'm not a skier? . . . Here in Colorado I am learning a rough, tough game, but the day is coming when we boys will have our crack at the Axis and it won't be long. Keep the copper coming though, pop, because your job is very important and we can't win this war without you and the rest of the men in the copper game."

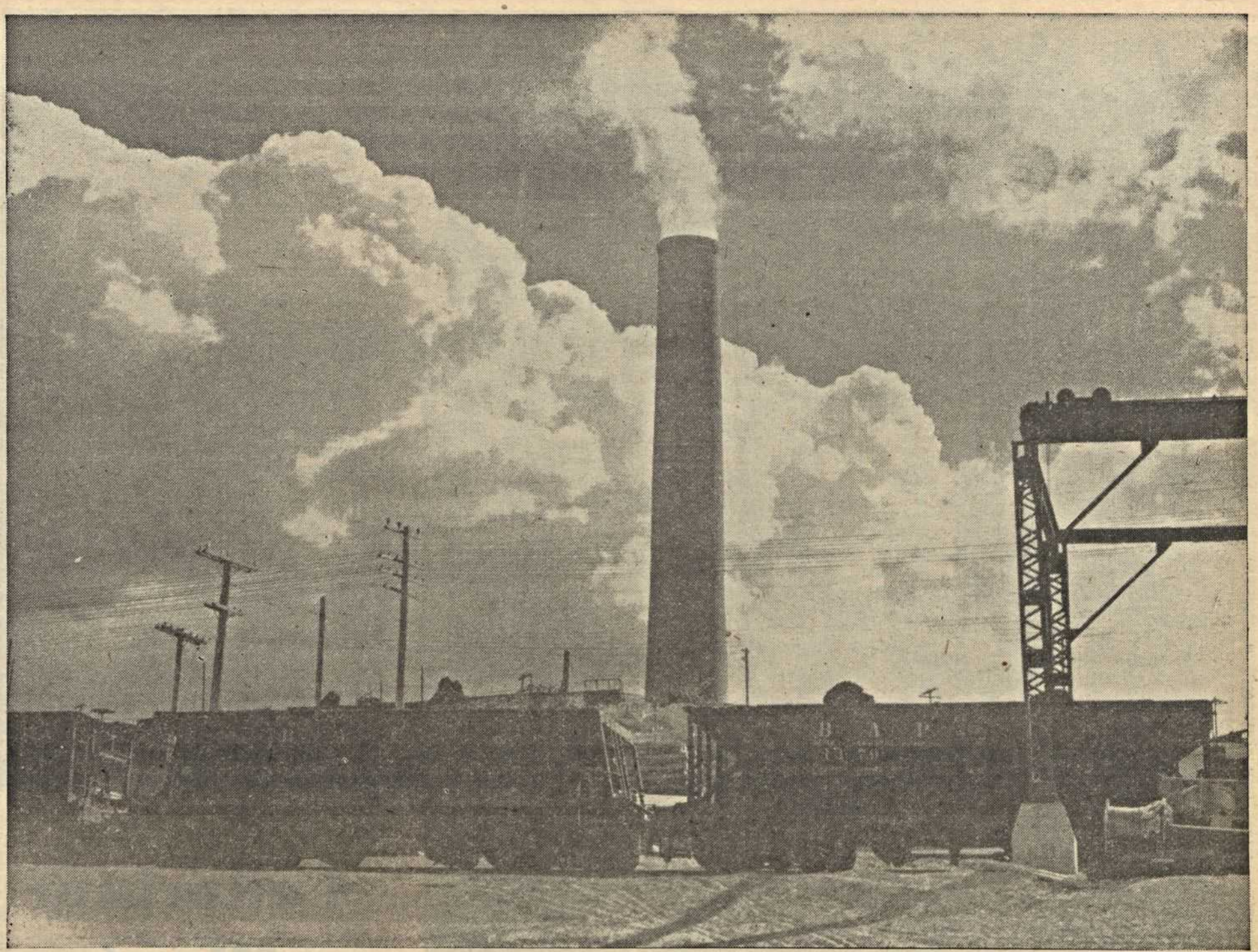
CARLO TABARACCI

LT. EMIL J. TABARACCI

"Pop, how are you doing? I noticed where the plant got the 'E' for putting out the copper. Keep up the good work for the more you put out the sooner you and I can have a beer together. . . . War is tough work, but we've got to fight it. A lot of us fellows long for peace so we can return to our jobs and enjoy our families and friends. I can only say that it's men like you, sticking to your job the way you do, that will bring us home quickly. Keep up the good work."

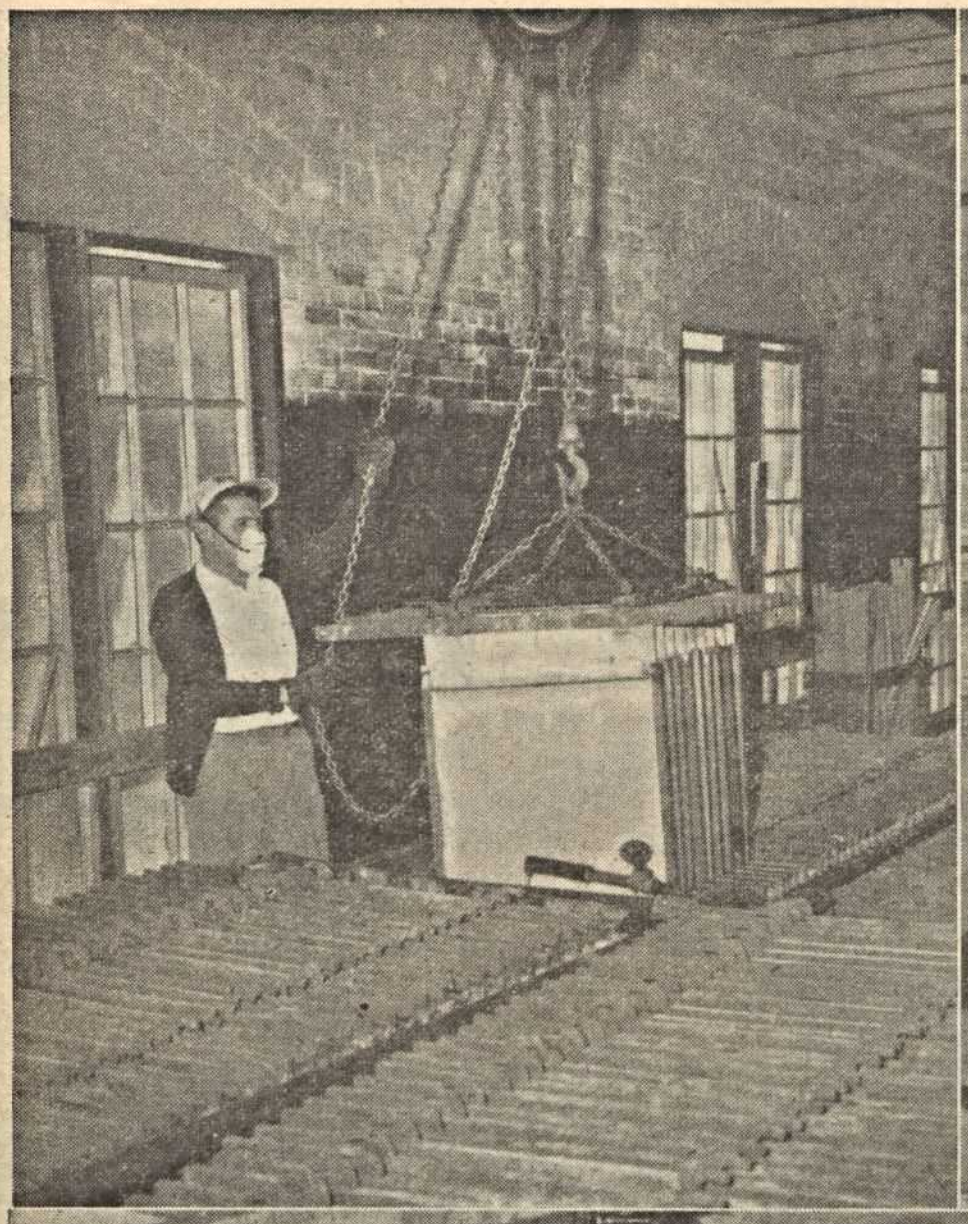
WELL, pop, we think you're doing all right! You've already given two of your boys to this war and would give more if they were old enough. You buy War Bonds and you stick on the job. You're the kind of man who realizes the importance of being in the copper industry today. You are alive to the fact that practically the entire success of this war depends upon you and other men like you in this industry today. . . . Thanks for letting us have these two letters from your two fine boys, both of whom left the Company ranks to go with Uncle Sam. They are doing a big job, but they would be the first to agree that your job, and the job of the miners in Butte and the smeltermen at Anaconda, is big too. We bet you'll stay on the job, Charlie, so that those two boys of yours will be back again with you soon.

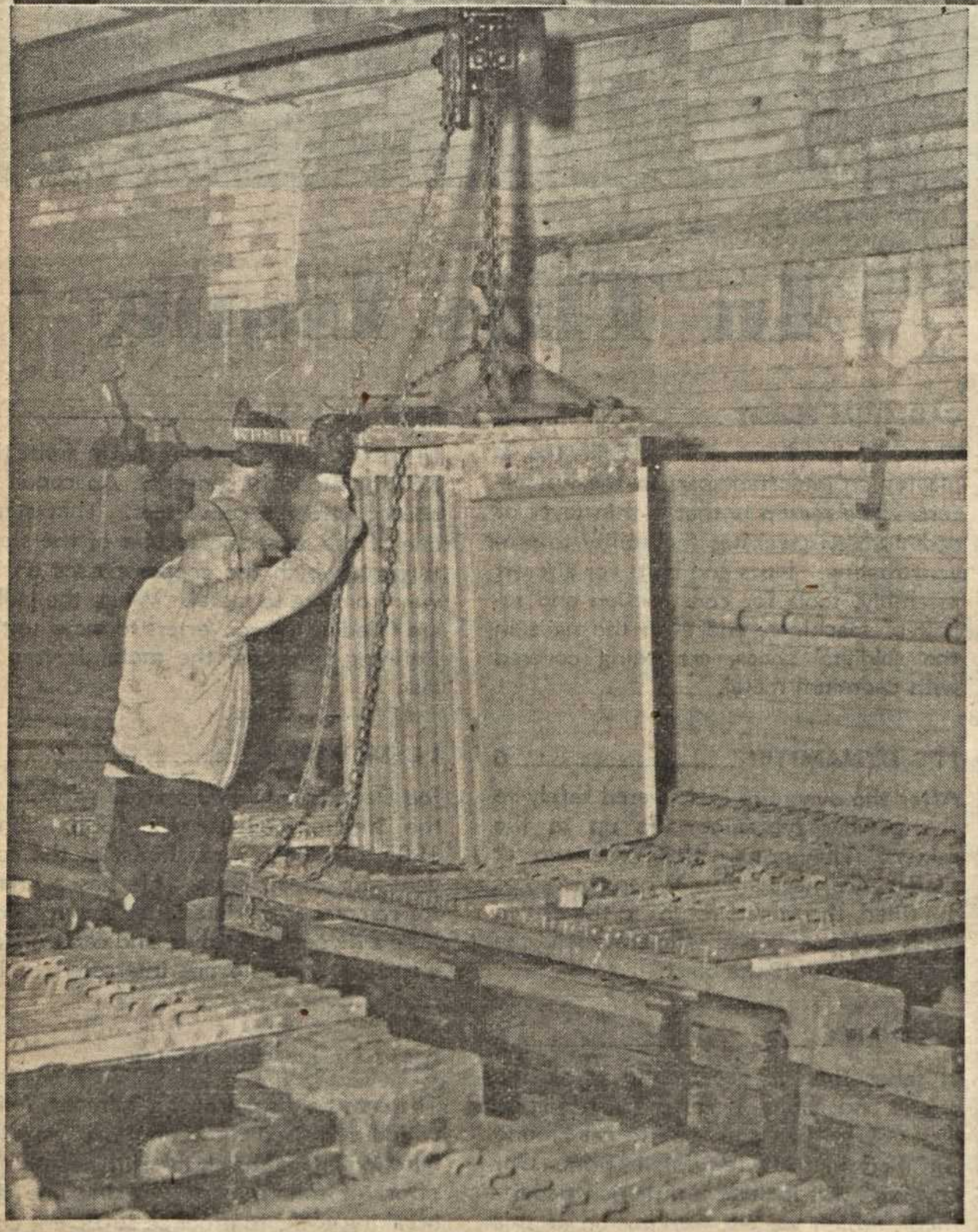
These are two extracts from letters written to their father by the sons of Carlo Tabaracci of the Electrolytic Copper Refinery at Great Falls. He has been with the Company since 1908 and with the Electrolytic Copper Refinery since 1927. His son Emil, shown at the right, joined the Army in May, 1941, and is somewhere in England now. He is a First Lieutenant in the Air Corps; he was a football player at Great Falls High and Montana State University. Jake, the boy at the upper left, joined the Ski Troopers in April, 1942. Prior to that he worked at the Furnace Refinery at Great Falls.



COPPER COMMANDO is the official newspaper of the Victory Labor-Management Production Committees of the Anaconda Copper Mining Company at Butte, Aanconda and Great Falls, Montana. It is issued every two weeks. . . . COPPER COMMANDO is headed by a joint committee from Labor and Management; its policies are shaped by both sides and are dictated by neither . . . COPPER COMMANDO was established at the recommendation of the War Department with the concurrence of the War Production Board. Its editor is Bob Newcomb; its associate editor is Marg Sammons; its safety editor is John L. Boardman; its chief photographer is Bob Nesmith; its staff photographer is Les Bishop. . . . Its Editorial Board consists of: Denis McCarthy, CIO; John F. Bird, AFL; Ed Renouard, ACM, from Butte; Dan Byrne, CIO; Joe Marick, AFL; C. A. Lemmon, ACM, from Anaconda; Jack Clark, CIO; Herb Donaldson, AFL, and E. S. Bardwell, ACM, from Great Falls. . . . COPPER COMMANDO is mailed to the home of every employe of ACM in the three locations—if you are not receiving your copy advise COPPER COMMANDO at 112 Hamilton Street, Butte, or, better still, drop in and tell us. This is Volume 1, No. 19.

In This Issue





Cadmium Plant

CADMIUM produced at Great Falls is a soft, bluish-white metal, very malleable and ductile so that it can be drawn. It is used for many purposes, one of the most important of which is a protective coating on other metals. Due to the ability of a thin layer of cadmium on steel to prevent rusting, it is being used as a coating on a multitude of military articles. The nuts and bolts used for aircraft assembly, the tools used for construction and repair of machines, and even the nails in the soldiers' shoes are now being covered with cadmium metal. The Navy also uses a great deal of cadmium to protect steel from the corrosive action of sea water. There are many other uses of cadmium such as in alloys for anti-friction bearings, as a substitute for tin in solders, and as a source for the brilliant color known as cadmium yellow.

Almost all the cadmium produced in the world comes from zinc ores, and is recovered as a by-product of zinc plants. It is one of the main by-products of the Great Falls Zinc Plant. In the regular method of producing electrolytic zinc, cadmium is regarded as an impurity and must be eliminated from the zinc solution before electrolysis if a high-grade zinc metal is to be produced. Cadmium is usually removed from the zinc solu-

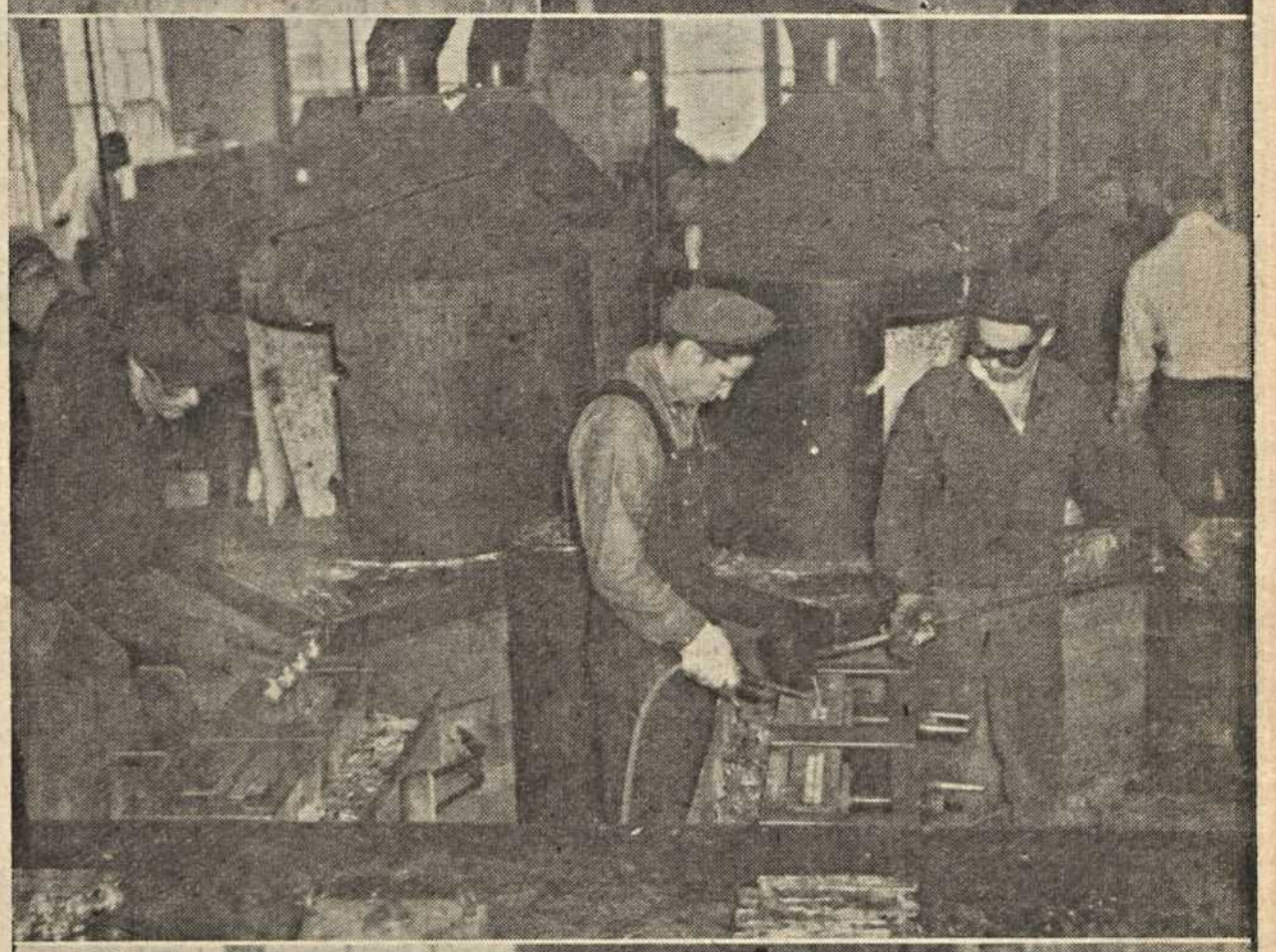
tion during the purification process and leaves the main cycle of the zinc plant in the purification residue.

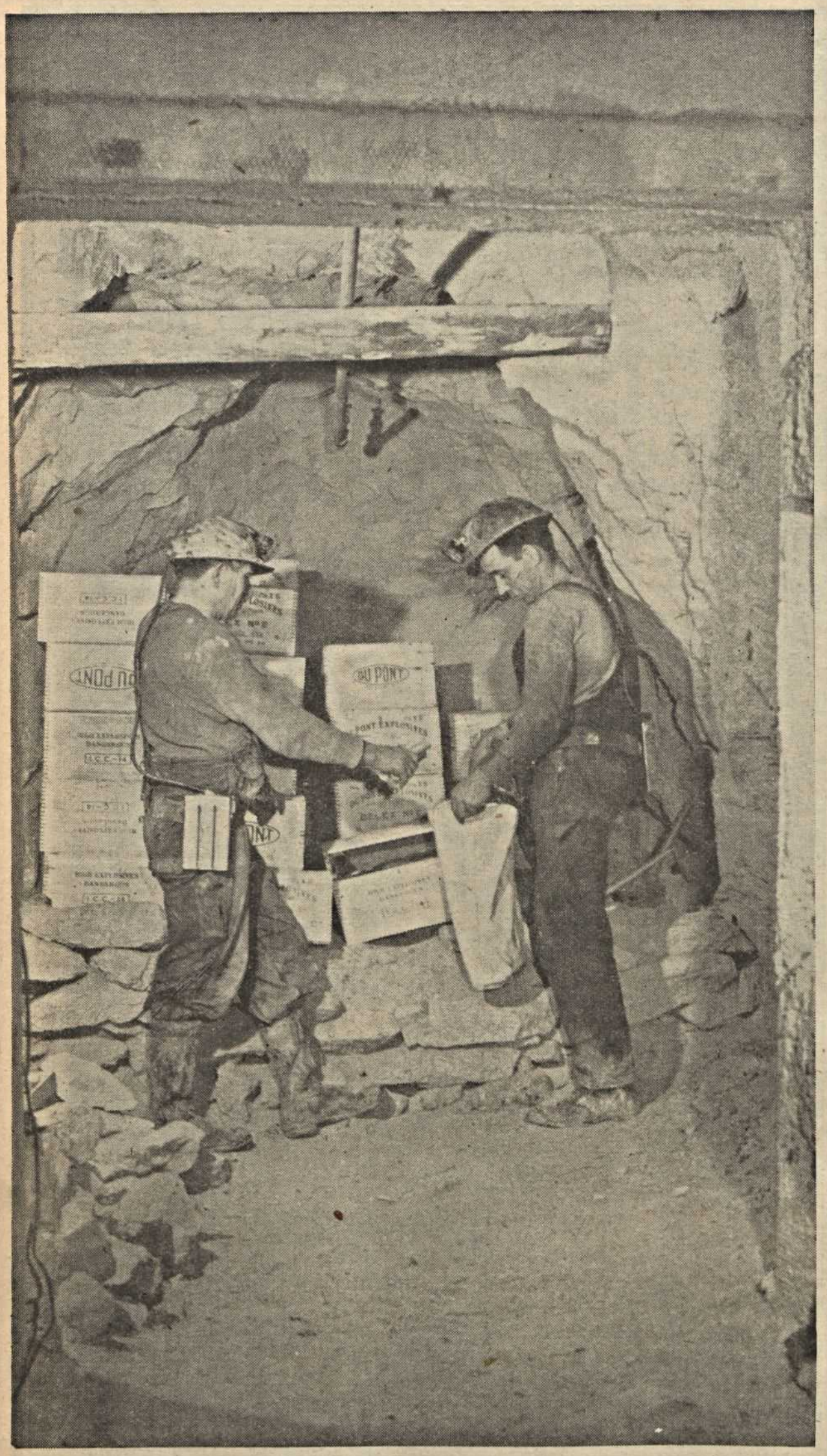
At Great Falls, this residue is then treated for the recovery of zinc and cadmium in the Purification Residue Plant. The Great Falls plant treats all the purification residue from both the Great Falls and Anaconda Zinc Plants. The cadmium is obtained as an impure product commonly known as "green cadmium sponge." This material consists mainly of finely divided, metallic particles of cadmium and zinc. This spongy material is then oxidized by piling it on a tube heated by a gas flame. When sufficiently oxidized, it is leached with return acid from the cadmium electrolyzing cells and a small amount of commercial sulphuric acid. The leach is ended with an excess of the cadmium sponge. Then, because of the fact that the sponge is not completely oxidized, the metallic particles of cadmium and zinc still remaining in the leach cause the other metals, such as copper, nickel, and cobalt, to be precipitated from the solution as a sludge. The leach is filtered and the clear solution is ready to be electrolyzed for the production of a pure cadmium metal.

The electrolyzing division of the Cadmium Plant closely resembles the electrolyzing division of the Zinc Plant. Tanks and electrodes of the same size and materials as used in the electrolysis of zinc are employed. This close resemblance can be easily seen in the upper left picture on the opposite page of Pete Bestwina raising a lift of cathodes from a cadmium electrolyzing cell. The cathodes are taken to a stripping rack where they are thoroughly washed with water. Clifford Skauge is doing this in the adjoining picture. After stripping the deposited layer of cadmium metal the aluminum cathode blanks are returned to the cells where cadmium is again deposited upon them. Sam Calderhead is lowering a lift into one of the cells in the large picture at the bottom.

The cadmium metal stripped from the electrolyzing cells is stacked, rolled into bundles for easy handling, and trammed to the Cadmium Casting Plant. In the picture at the top of this page we see Bill Miller charging a bundle of cathodes into a melting furnace. In this furnace the cathodes are melted under a bath of molten caustic soda. The molten metal is then cast into slabs weighing about 75 pounds each.

The 75-pound slabs are again melted in small furnaces from which the molten metal is ladled by hand into moulds of various shapes. In the center picture we see Everett Custer, Muriel Pluris, and Bud French ladling and casting cadmium balls. The finished shapes are washed, inspected, weighed, and packed into wooden boxes for shipment. In the picture at the bottom we see Jim Walsh inspecting and weighing a box of cadmium balls while Kenneth McCarty is banding a box of cadmium balls





IT'S DYNAMITE!

In the last issue the boys brought the dynamite safely from the warehouse to the powder magazine at the mine. Now it's up to the miners to present their order slip at the powder magazine for the necessary dynamite and primers with which to make the vital blasts. With the necessary supplies at hand, the miners quickly and efficiently load the already drilled holes and set off the blast. Here's how it is done.

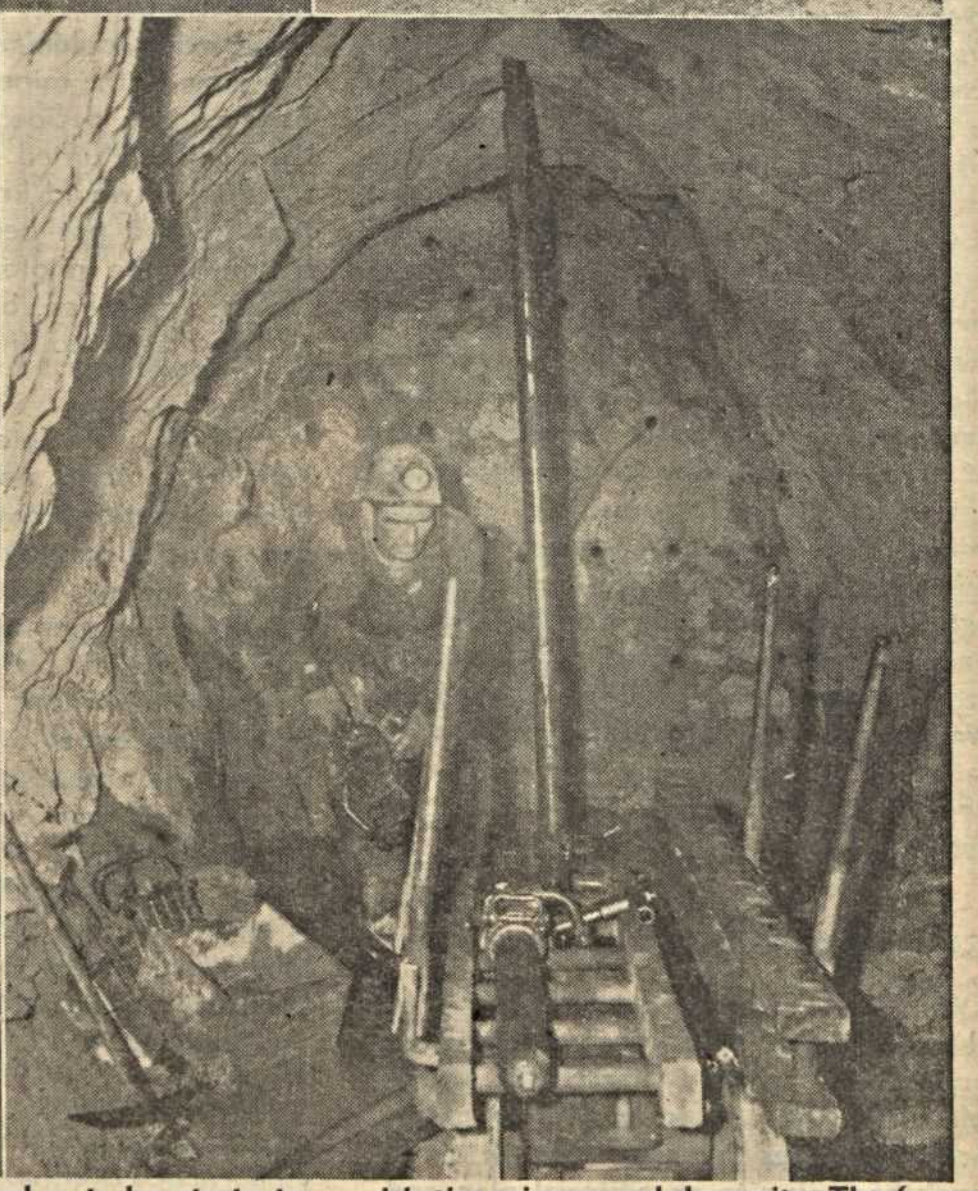
EVERY blast with dynamite in the mines means another blow delivered to the Axis. That means that every time a miner brings over his order slip for a supply, it's mighty important that the order be filled pronto so that these blows will not be held up. Let's see how these blows are brought about.

Underground, the magazines are kept locked and, at specified hours, powder and primer orders are filled. The boss on the beat makes out a powder order and gives it to the miner, who takes it to the powder man at the magazine.

In the picture opposite, Bill Markunis at the powder magazine is counting out the powder for William Vann's blast. Vann's slip which he gave to Bill showed the amount needed for the blast. Vann also received his capped fuses.

Upon returning to his working place, with his powder and capped fuses, the miner takes one stick of powder for each hole he has drilled and inserts a capped fuse into the dynamite stick. In the middle right picture Stuart Mayo is taking down his bar and machine preparatory to loading his round. All the equipment is taken to a safe place before blasting, so with all holes drilled, he is preparing to move his equipment out. In the lower left shot he has taken out his truck and is ready to load the round with the primers and powder. He places the primer into the bottom of each hole he is to blast and tamps it in with a wooden tamping stick. He has drilled six feet, so he pushes the primer into the bottom of the hole and fills the remainder of the hole with the necessary dynamite for the blast. There will probably be enough dynamite put in the hole to pull the full depth of the round drilled. In the lower center picture, he has almost finished his job of loading the holes with the primers and dynamite. Notice how the fuse ends are kept off the bottom of the cross cut so as to keep them dry. In the lower right shot he is spacing his fuses ready to cut so they will go off in proper rotation. He then bunches his fuse, usually in two bunches, and is ready to spit or ignite the round.

The blasting caps are delivered to the mines each Wednesday and are stored on an easily accessible level underground. As needed, the caps are taken to the surface to the primer house where the caps are attached to fuse by crimping. After the cap is crimped, the opposite end is dipped in white lead to guard against the possibility of cutting more than once when timing. That's Sam Patterson crimping blasting caps onto fuses to make a primer in the upper left next page picture and in the middle upper shot of Sam you can see the white ends of the fuses. In the upper right shot Robert Hendy is making a completed primer by inserting the blasting cap into a stick of powder. In the middle left picture, Jet Ward, John Boes and Claude Crabtree are getting electric primers ready to load a hole. Electric primers have various delays to time or rotate the round and are used in wet places. As needed, the primers are sent underground to the magazines.



Here you can see just how it is done. In the center right shot, Stuart Mayo is taking down his bar and machine. Since all the holes are drilled, he moves out his equipment before he starts to load the holes. In the lower left picture, with all the equipment moved out, he starts to load the already drilled holes. You can see the wooden tamping stick which he is using to push the primer into the bottom of each hole. In the center picture he is finishing up the job of loading the holes with the primers and dynamite. The fuse ends are kept off the bottom of the cross cut to keep them dry. In the lower right, Stuart is spacing his fuses ready to cut. After they are bunched, he ignites the round and the ore is started moving.

COPPER Commando

The Official Newspaper of the Victory Labor-Management Production Committees at Butte, Anaconda and Great Falls

People & Places

Table Talk

THE problem of food rationing has struck every one of us squarely between the eyes. It would not be proper to say that we are hit harder than other sections of the country, for this is not true. But it is true that the nation-wide rationing, which the demands of war have put upon us, need the serious attention of everyone if we are to eat properly.

Today, for the first time, there are two factors in purchasing food—one factor is the price of food and the other is the rationing points. It is necessary for every householder to get the utmost out of her points and to make the dollar she spends go just as far as possible. As the editors of your Labor-Management Committee newspaper, we felt some weeks ago that we should create a department on the subject of nutrition, to advise readers and their families of the best ways in which to handle the problem of rationing. We are progressing nicely and hope to launch this new department very soon.

Cive Us Time

EVERY once in a while we get a kick to the effect that this mine or that shop ought to be "covered" in COPPER COMMANDO. We try to explain to everybody that raises this point that we try to work according to an editorial plan and that we will get to everything in time. It strikes us that all of our readers might like to know that, so far as we are able, we produce the newspaper on a fixed schedule. Of course, lots of timely stuff keeps coming up—it isn't possible to plan some of our feature material very far in advance, but if we are "covering" some of the operations at the smelter, for example, we like to take the different operations in their proper order. In this way, readers tell us, they are able to follow the complete operation from the beginning right on through.

We will cover everything, as we say, in the course of time—it may be weeks or even months before we are able to get around to you, but in the meantime please be patient. Incidentally, if you have any criticisms or comments on the order in which we are running our material, please let us know.

WELL, we seem to have gotten ourselves tied up in a little controversy, and we think you'd like to hear about it.

It so happens that with our issue of April 9 we used on the cover a picture of a gallows frame with a range of mountains behind it. We thought it was a nice picture and so did a lot of other people. But the first thing you knew the people started asking the question: "What mine is it?" At least a hundred calls came into the Butte Miners' Union and almost as many to the COPPER COMMANDO office. By this time Marg Sammons, who couldn't find any record of the name of the mine, was getting pretty frantic. She decided to wait until Bob Newcomb returned from Washington, figuring he would know. He explained that he had not been along with Bob Nesmith, the photographer, when the picture was taken, but it would seem a simple matter to find out from somebody.

There were lots of ideas but very little agreement, and there still isn't. When Nesmith arrived in town, his fellow editors pounced on him and demanded to know the name of the mine. He looked the photograph over carefully and then said he hadn't the faintest idea what the mine was. He explained that he was up on a hill one day and this looked like a good picture, and he took it. The only record he had was a number B-875 which didn't mean anything to anybody. The tallies indicate that this is a view of the Adams or Old Mountain View. Next choices are the Old Leonard, the Rarus, the Orphan Girl and the Berkeley.

Under ordinary conditions, of course, your editors would feel highly embarrassed over having printed a picture they couldn't identify, but we've had too much fun out of all this to be sorry for what we've done. One of the miners who dropped in the office the other night (he swears it's the Berkeley) tells us that they are making bets in the mines.

Anybody who can come across with the real evidence will be rewarded with their picture in COPPER COMMANDO, but no money.

Social Notes

IT has been a busy two weeks, with a steady flow of visitors. One of the men you probably have seen around is Frank Cannon of the Copper Division of the War Production Board, who has come to Montana to carry out some work in connection with his division. Frank worked in the Butte mines for fourteen years before going to the west coast, where he was engaged for some time in safety work. He makes his home in Washington these days, but is pleased to be back in Montana for a while to renew old acquaintances.

We had a visit from Sam Treloar, who drops in occasionally to see how things are going. We were particularly pleased the other afternoon when Howard Johnson, the Chief Justice, called to see what the COMMANDO office looks like. Frank Venable stopped in to tell us that the USO drive for books for service men had gone beyond its quota, and a mention of the drive in our Labor-Management Committee newspaper had helped a good deal.

We heard some good stories about the old days from Neil Weston, first president of the Butte Miners' Union, when he dropped in with his wife.

A Record, We Believe

WE thought one hundred sixty-four years of service for one family quite a record when we heard of the McVicars. They say the McVicars family have a record for reliability as well as for years. When Andrew McVicars started to work for the Diamondville Coal and Coke Company in 1902, he didn't think he'd still be working forty years later with only one move, which was in 1917, when he came to Anaconda with the B., A. & P. Of course, his work changed for now at seventy-six he can be found at the Smelter in the Electrical Shop.

Neither did he think he'd have four sons working for the Company. First it was John, who started at the Oakley Mine in 1908 and later went to the Mountain Trading Company and finally to Anaconda as chief clerk in the Purchasing Department. A little later his second son, James, started in at the Oakley Mine and followed his brother to the Mountain Trading Company and then to Anaconda and is right there today as clerk in the Electrical Department. It seems to be well known that "if you want any electrical information, call on Jim."

Along came the day when Andrew, the third son, started in the office at Diamondville as cashier. Later he was transferred to Butte as cashier for the Montana Hardware. Finally, Bill, the youngest, moved in the office at Diamondville and later came to Anaconda with the B., A. & P., and now is Purchasing Agent for the railroad. Funny about the boys. John, the oldest, and Bill, the youngest, are the home men of the family. Both like to work around their homes and enjoy their gardens. Jim and Andrew like outdoor sports—fishing, hunting and golf.

Free at Last

IN the last issue we left the molten matte from the Reverberatory Furnaces at Anaconda in ladles to be moved by overhead cranes from the furnaces to the converters where a further concentration of values is made. This further concentration of values is made by the elimination of sulphur and iron. Of this operation two products are made—blister copper and slag—but this time the slag is too valuable to be thrown away. The slag is returned to the Reverberatory Furnaces for retreatment, and the blister copper is moved on for further refining.

In the upper left picture, the ladle is pouring its contents into the converter and in the upper right that's the ladle after the molten matte has been emptied into the converter. These overhead cranes pick up the ladles of molten matte, containing twenty tons, and pour the contents into the mouth of the converter. A converting furnace is so constructed that it can be tilted back and forth on its supports so that its contents can be poured out into ladles as desired. Each furnace has a charge of one hundred thirty tons of matte.

For oxidation, compressed air is introduced by suitable connections, through a row of pipes on one side of the furnace, near the bottom. The air is turned on

To the right, the converter is ready to be skimmed, which is accomplished by turning the furnace forward, shutting off the air, and pouring the slag into ladles

as soon as the matte is poured in, and as it blows through the molten mass, the oxidation of sulphur and iron begins. The air blown through this molten matte oxidizes the elements of the molten material in a definite sequence. The impurities are converted either into gases which pass off in the flue system, or into slag, which is skimmed off before the copper sulphide is oxidized. After the slag is skimmed off, the sulphur in this copper sulphide is oxidized—leaving metallic copper. Sufficient heat is given off from the oxidation of sulphur and iron to maintain a molten condition of the materials.

Converting is carried on in two stages. First, the oxidation of the iron sulphide, and second, the oxidation of the copper sulphide. In both cases the sulphur combines with the oxygen of the compressed air blowing into the charge and passes off as gas to the flue system. A suitable slag is just as important here as in the smelting furnace. After the iron has been oxidized, it is in proper condition to unite with silica and forms slag. Since there is no silica present, it is added usually in the form of silicious gold and silver ores. The end of the slagging period is the "tough spot" of the converting process. If too little silica has been added, magnetite will form, and if too much silica is present, the slag will be stringy and unsatisfactory.

To the left, you can get a good view of the splash of the molten slag. These ladles are then moved by the overhead cranes back to the Reverberatory Furnaces for retreatment

During the time the iron and silica are combining to form the slag, the copper sulphide separates from the matte, and since it is heavier than the matte or the slag, it settles to the bottom of the furnace. In the fused state, copper has a stronger affinity for sulphur than have the other metals, and retains its sulphur until practically all the sulphur of the iron sulphides has been oxidized. The copper sulphide remains practically unchanged in the bottom of the furnace until almost all of the iron has entered the slag. At this point, the converter is said to be "high" and is "skimmed." The lower left shot shows the Reverberatory being charged with the slag from the converters. When the skimming operation is completed, the air is turned on, the furnace is turned up, and the oxidation of the copper sulphide begun. This is the last step on the way of ore to metal.

After the charge is finished, the metal, known as blister copper, is poured into the ladles like in the lower right shot which are moved by the overhead cranes and emptied into the refining furnaces. About eight hours are required to convert the matte to copper. This blister copper, charged to the refining furnaces, is about 98.8% pure. It still contains small amounts of sulphur and other impurities.

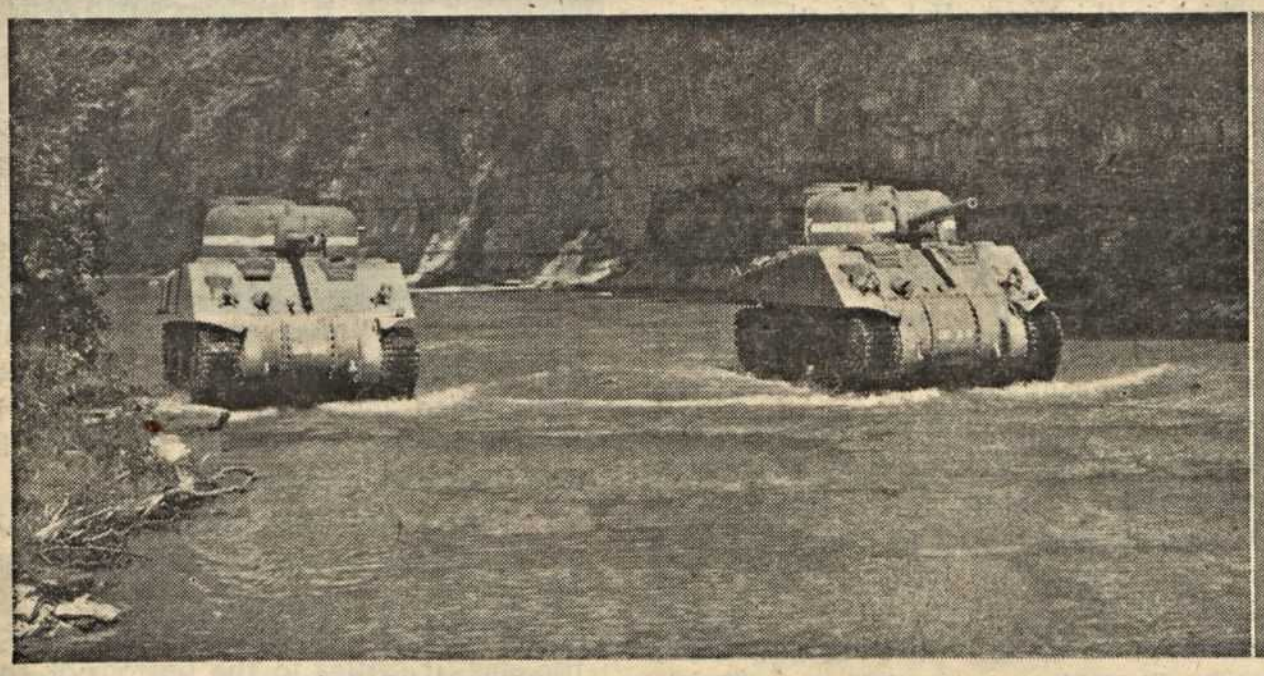
KNOW YOUR ARMY?

How well do you know your Army?

Thanks to the War Department publication, "Firepower," we are able to reproduce here six photographs. Indicate your choice for the proper description and see how good you are. Answers will be found on page 12. Put on your thinking cap and see how good you are—no fair peeking.

This man is a: (1) Commando, (2) Marine, (3) combat photographer.

The two men you see in the picture above are operating: (1) moving picture camera, (2) howitzer, (3) flame thrower, (4) trench mortar.



The equipment shown in the picture above is: (1) PT boats, (2) destroyers, (3) M-4 medium tanks, (4) landging barges.

This is: (1) Henry A. Wallace, (2) Under Secretary of War Patterson, (3) Stanley Babcock.

This smiling gal is a: (1) SPAR, (2) Red Cross nurse, (3) WAAC, (4) WAVE.

The men in the picture above are concentrating their attention on a: (1) signal device, (2) telescope, (3) 16-inch gun, (4) height finder for anti-aircraft guns.

Sounding Off

Washington, D. C., May 5

WE are back in the Nation's capital to work with the War Depratment and the Copper Division of the War Production Board, as well as other governmental agencies, in the creation of a special copper issue of COPPER COMMANDO. We are going to get this out just as soon as we can—it takes time to check all your facts and get necessary government approvals on material, because in stuff like this you must be very careful not to reveal information of military value to the enemy.

The idea behind a special copper issue started in this way: We got to listing one day, pretty much to see if we could do it, the uses of copper in war. We were able to jot down quite a few, but we later discovered that the uses of copper in war run into the hundreds. We got to talking to some of the boys in Butte, Anaconda and Great Falls and we found that, in many cases, they were not able to list many either. So we got to thinking in terms of an issue which would show the endless uses to which copper is put—our editorial boards in the three localities concurred with the idea and so we went to work.

To date we have gone through about 4,000 official photographs, examined any number of reports, and obtained official information from a good many sources at War, Navy, WPB and other departments.

We don't want to say in advance that we think the copper issue will be terrific—all we can say is that we are trying to make it a good, useful issue.

●

Here in Washington we were invited to attend a staff meeting at the War Department. The discussion was, of course, off the record. But it was certainly stimulating to sit and listen to the inside report of the progress we are making in the war. When you stop to realize that we must send fighting equipment to practically every corner of the world, get it there fast and in great quantities, it staggers you a little to learn how much progress is being made. There is a great lot of talk about opening another front, but the actual fact is that another front is already opened. We are shooting for an effective foothold; we need a spring board from which to launch our all-out offensive against the Axis.

But when we talk in terms of the increasing production in this country we must remember that the Axis is producing, too. They are working harder and longer hours. The knowledge that the American industrial machine is gearing up faster and faster every day is one thing that keeps the Axis hustling itself.

–BOB NEWCOMB

I REMEMBER

JOE DEE, who hasn't worked a shift for another company since 1891, couldn't understand why Lt. Hadsell chose him as the one on whom to adjust the new Army-Navy "E" pin or why we wanted a picture of him. Joe's modesty in everything he does is one of the first things you notice about him. Another thing you'll notice right off is his knack for calling off dates. For instance, he recalls that he came to Anaconda on Columbus Day, Friday, October 12, 1888, and that he went to work on the following Monday morning, the 15th day of October, 1888. The day Joe arrived in Anaconda he met Arthur Fourtier, who had come in a stranger to Anaconda that same night. Art has had a barber shop in Anaconda ever since and Joe and Art are the fastest of friends. Every Columbus Day since 1888 the two staunch friends get together for a drink, and in the meantime Joe stops in the barber shop to talk things over with his friend. Joe says he likes to walk up town after the day's work is done to kill time and there's no better place than Art's barber shop to stop.

Joe started at the concentrator in the old lower works but since October, 1903, he's been a machinist at the concentrator repair shop. We say there isn't much about the concentrators he doesn't know, for he likes his work and as he says, "I've worked pretty steady. I always worked all the time they were running and got along. Never fired off a job. The superintendents have all been fine and so have the men."

Joe came to Anaconda from Michigan—he had worked in a machine shop and hoisted coal back there, but his brother in Anaconda wrote interesting accounts of the West. His wife came from Michigan, too, and from not far from Joe's home but, funny thing, they didn't meet until she came out to Anaconda to keep house for her brother. Joe met her and in 1894 they were married.

They have two sons and now a ten year old granddaughter, who is the apple of Joe's eye. Joe says, "I don't know what I'd do without my granddaughter." From what we could learn, she thinks her grandfather is tops too—and so did we.

Display at the Mines

OF much interest to people in the Butte section is the display which was recently set up at the Belmont Mine and which will be displayed at the other mines in the future. This is an exhibit of shells, furnished by the aviation authorities at Gore Field in Great Falls. The exhibit gives miners and others a chance to see the end results of the ore they produce.

The following aircraft shells are displayed:

47 mm naval anti-aircraft
37 mm armor-piercing anti-tank projectile
20 mm high-explosive incendiary
.50 calibre armor-piercing
.30-'06 small arms ammunition
37 mm high-explosive incendiary
37 mm shrapnel
.50 calibre incendiary
.45 calibre automatic

Also included in the display are pictures of local Air Corps personnel—the boys who formerly worked as miners, samplers, motormen, etc. One important point brought out in this exhibit is that it takes the combined effort of four miners, working one day breaking rock, to produce sufficient copper to keep the guns of one flying fortress blasting at the enemy for one minute, firing only .50 calibre machine guns. In all of the shells shown, there is a large amount of copper, zinc and manganese, all products of the Butte mines.

Another interesting part of this exhibit states that, if a miner should miss only one shift, that shift would have produced sufficient copper to make:

4,800 .30 calibre shells, or
920 .50 calibre shells, or
280 37 mm shells, or
9,000 .45 calibre shells, or
600 20 mm shells, or
80 47 mm shells.

ANSWERS

Answers to questions on page 10

(1) Combat photographer
(2) Trench mortar
(3) M-4 medium tanks
(4) Robert P. Patterson
(5) WAAC
(6) Height finder